

Serial No. 10/821,910

Amendments to the Claims

1 (currently amended): A variable reluctance resolver ~~having a rotor which~~  
~~comprises~~ comprising:

a rotor and a stator wherein the rotor includes a noncircular core of magnetic material  
[[and]] which is rotatably supported inside [[a]] the stator with a gap therebetween, the shape  
of the rotor being such that the magnetic gap permeance, ~~which is based on the gap~~, varies  
according to a sine function of the rotational angle,

said noncircular core including a central circular portion and a plurality of salient poles  
protruding on the periphery of the central circular portion.

wherein each salient pole of the rotor has a center which is offset by a prescribed offset  
distance in the radial direction from the center of the rotor, and the outer peripheral shape of  
each salient pole comprises [[by]] an arc of a circle of radius r which is centered on the center  
of the salient pole and which does not extend to the inner peripheral surface of the stator.

2 (original): A variable reluctance resolver as claimed in claim 1 wherein the shape  
of the rotor is defined in accordance with the rotational angle, which is expressed by the  
mechanical angle  $\phi$  or the electrical angle  $\theta$  corrected by the shaft angle multiplier, and the  
offset distance A such that the outer radius R<sub>r</sub> of the rotor has a value given by the following  
equation:

$$R_r = A \cos \phi + \sqrt{r^2 - A^2 \sin^2 \phi} = A \cos (\theta/N) + \sqrt{r^2 - A^2 \sin^2 (\theta/N)}$$

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wherein  $r$  is the radius of each salient pole,  $A$  is the offset distance,  $\phi$  is the mechanical angle ( $\phi = \text{electrical angle } \theta / \text{shaft angle multiplier } N$ ),  $\theta$  is the electrical angle, and  $N$  is the shaft angle multiplier.

3 (previously presented): A variable reluctance resolver as claimed in claim 1 wherein the shape of the rotor is defined in accordance with the rotational angle, which is expressed by the mechanical angle  $\phi$  or the electrical angle  $\theta$  corrected by the shaft angle multiplier, such that the gap  $\delta$  between the stator and the rotor has a value given by the following equation:

$$\delta = R_s - A \cos \phi - \sqrt{r^2 - A^2 \sin^2 \phi} = R_s - A \cos (\theta/N) - \sqrt{r^2 - A^2 \sin^2 (\theta/N)}$$

wherein  $\delta$  is the gap,  $R_s$  is the inner radius of the stator,  $A$  is the offset distance,  $\phi$  is the mechanical angle ( $\phi = \text{electrical angle } \theta / \text{shaft angle multiplier } N$ ),  $\theta$  is the electrical angle,  $N$  is the shaft angle multiplier, and  $r$  is the radius of each salient pole.

4 (new): A variable reluctance resolver as claimed in claim 2 wherein the rotor includes as least four abutting salient poles protruding from and evenly spaced around the periphery of the central circular portion.

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5 (new): A variable reluctance resolver as claimed in claim 3 wherein the rotor includes as least four abutting salient poles protruding from and evenly spaced around the periphery of the central circular portion.